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*LYSIOSQUILLA PANAMICA*, A NEW STOMATOPOD  
CRUSTACEAN FROM THE EASTERN PACIFIC REGION

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In 1940 Waldo L. Schmitt referred to two specimens of a *Lysiosquilla* collected by the 1933 Allan Hancock Pacific Expedition at La Libertad, Ecuador, which he identified with *Lysiosquilla maculata* (Fabricius). He noted that this species had a wide Indo-Pacific distribution but had not been recorded previously from east of the Marquesas or Hawaiian Islands. Subsequently, Edward F. Klima, then associated with the Inter-American Tropical Tuna Commission, forwarded to me a *Lysiosquilla* collected in the Gulf of Panama. During a review of the Indo-West Pacific species of *Lysiosquilla*, the specimens mentioned by Schmitt and that received from Klima were compared with the large series of *L. maculata* in the Division of Crustacea, National Museum of Natural History (USNM) and were found to represent a distinct species which is described below.

I thank Edward F. Klima for his aid in obtaining collections of stomatopods from the Pacific coast of Panama and from Ecuador as well; Janet Haig, Allan Hancock Foundation (AHF), for the loan of one of the specimens originally recorded by W. L. Schmitt; L. G. Abele, School of Marine and Atmospheric Sciences, University of Miami, for making available material collected off both coasts of Panama; and Horton H. Hobbs, Jr., for his comments on the manuscript. The illustrations were made by my wife Lilly. The support of the Research Awards Program of the Smithsonian Institution is acknowledged.

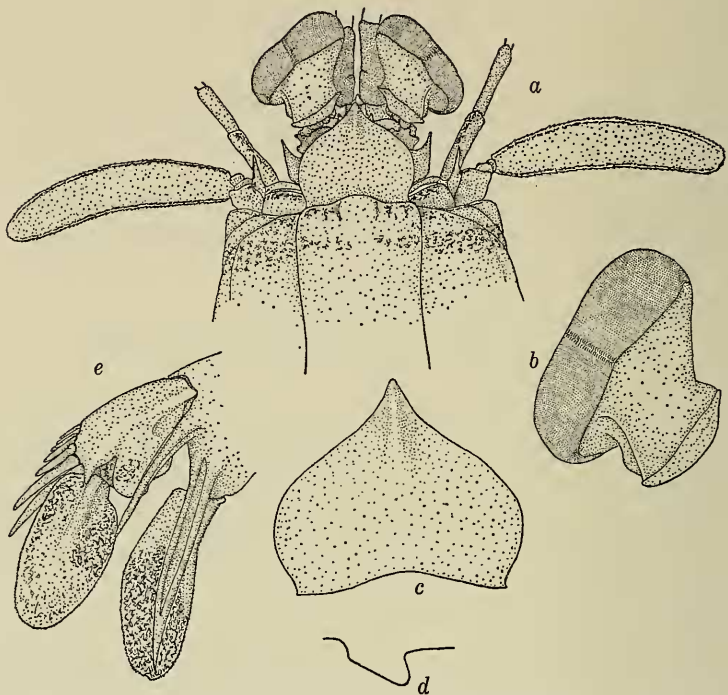


FIG. 1. *Lysiosquilla panamica* new species, male paratype: *a*, anterior portion of body; *b*, eye, enlarged; *c*, rostral plate, enlarged; *d*, outline of ventral keel of eighth thoracic somite; *e*, uropod, ventral view. (Setae omitted; anterolateral angles of carapace wrinkled).

***Lysiosquilla panamica* new species**

Figure 1

*Lysiosquilla maculata*.—Schmitt, 1940: 190, figure 21 [not *L. maculata* (Fabricius)].

*Holotype*: ♂, total length 163 mm; Pacific Ocean, Panama, Gulf of Panama; 08°40' N, 79°40' W; 50 feet, mud; commercial shrimp trawler; Inter-American Tropical Tuna Commission; 30 June 1959; USNM 136689.

*Paratypes*: 1 ♂, total length 105 mm; La Libertad, Ecuador; dip net at night light; F. Ziesenhenné, Allan Hancock Pacific Expedition station 17-33; 20 January 1933; USNM 68582.—1 ♀, total length 95 mm; same data; AHF 337.—1 ♂, total length 92 mm; Pacific Ocean, Panama, Gulf of Panama, Gulf of Chimán at mouth of river and out around islets; 3-8 meters; mud; L. G. Abele, col.; 27 May 1969; USNM 137111.

*Description:* Eye large, cornea bilobed, set slightly obliquely on stalk. Eye extending about to end of second segment of antennular peduncle. Ocular scales erect, triangular, apices inclined anteriorly. Corneal indices 291 to 404 in specimens with carapace lengths of 16.2 to 29.5 mm.

Antennular peduncle half or slightly more than half as long as carapace. Dorsal processes of antennular somite visible lateral to rostral plate as sharp, anteriorly-directed spines.

Antennal scale slender, curved, length more than 3 times greatest width (length/width ratio ranging between 3.25 and 3.76), more than half as long as carapace; scale outlined by dark pigment. Antennal peduncle extending about to anterior margin of eye. Antennal protopod with sharp, triangular anterior projection, directed anterolaterally, above articulation of antennal peduncle; protopod with 1 mesial and 2 ventral papillae.

Rostral plate cordiform, broader than long, apex slightly deflexed. Low median carina present on anterior third.

Dactylus of raptorial claw with 11 teeth, proximal very small, outer margin of dactylus slightly sinuate. Propodus of claw longer than carapace; propodal indices 073–087 in males, 081 in females. Dorsal tooth of carpus of claw directed along longitudinal axis of claw, apex not noticeably deflexed.

Mandibular palp and 5 epipods present.

Ventral keel of eighth thoracic somite produced into erect, triangular projection, apex unarmed, inclined posteriorly.

Abdomen smooth, unarmed dorsally. Sixth somite smooth medially, submedian areas irregularly wrinkled, with broad, smooth lateral boss on each side flanked mesially by longitudinal groove. Sixth somite with triangular projection ventrolaterally anterior to articulation of each uropod.

Telson broader than long, with low, raised, smooth, triangular median boss and 2 lower, eroded submedian bosses; posterior surface between bosses and area lateral to submedian bosses pitted. Anterior ridge of telson with 1–3 low tubercles laterally on holotype, surface irregular in female paratype. Lateral margin of telson with well-defined lateral carina extending almost to base of lateral tooth. Posterior margin of telson with 4 pairs of fixed projections, outer sharp, inner pairs rounded.

Basal segment of uropod with dorsal spine. Proximal segment of exopod with 7–8 movable spines, distalmost extending to or slightly overreaching midlength of distal segment. Distal segment of exopod longer than proximal. Endopod broad, ovate, length less than 3 times greatest width; apex of endopod dark. Basal prolongation consisting of 2 spines, trefoil in cross-section, inner longer. Ventral surface of uropodal protopod unarmed or with small spinule or tubercle at articulation of endopod.

*Color:* Largely faded in available specimens. Margin of antennal scale outlined by dark pigment. Merus of claw with thin, vertical dark bar distally on outer surface. Carapace with 3 narrow dark bands. Posterior

3 thoracic and all abdominal somites with broad, diffuse anterior bands and narrower, darker posterior ones. Telson with broad dark bar extending across dorsal surface, divided into 3 large spots on female. Proximal half of dorsal margin and most of anterior margin of proximal segment of uropod dark. Uropodal exopod with large dark spot overlapping distal segments, apex of exopod light. Distal  $\frac{2}{3}$ - $\frac{4}{5}$  of uropodal endopod dark.

*Measurements:* Males, total length 105-163 mm; only female examined, total length 95 mm. Other measurements in mm of male holotype, TL 163 mm: carapace length 29.5; cornea width 7.3; rostral plate length 7.2, width 8.4; antennal scale length 17.9, width 5.5; raptorial propodus length 40.4; fifth abdominal somite width 36.8; telson length 23.7, width 34.6.

*Discussion:* *Lysiosquilla panamica* is the fifth species of the genus to be recorded from American waters and is one of two species found in the tropical eastern Pacific region. It can be distinguished from *L. desaussurei* (Stimpson), the other eastern Pacific species, by the absence of: (a) a spine on the ventral keel of the eighth thoracic somite, (b) a spine on the ventral surface of the uropodal protopod at the articulation of the endopod (an inconspicuous tubercle or spinule may be present in *L. panamica*), and (c) dorsal tubercles and spinules on the sixth abdominal somite and telson. The new species resembles *L. desaussurei* in having a slender antennal scale, outlined by dark pigment, as well as an anterior projection on the antennal protopod. The two western Atlantic species with a non-tuberculate sixth abdominal somite and telson, *L. glabriuscula* (Lamarck) and *L. campechiensis* Manning, both have fewer (6-7 rather than 11) teeth on the dactylus of the raptorial claw (Manning, 1969). The other western Atlantic species, *L. scabricauda* (Lamarck), resembles *L. desaussurei* and differs from *L. panamica* in having a spinulose sixth abdominal somite and telson. The American species can be distinguished in the key given below. The western Atlantic species were reviewed by Manning (1969), and Manning (in press) redescribed *L. desaussurei*.

*Lysiosquilla panamica* differs from *L. maculata* from the Indo-West Pacific region in having a triangular anterior projection on the antennal protopod, a slender antennal scale, with the margin outlined by dark pigment, and an angular projection on the ventral keel of the eighth thoracic somite. The antennal scale in *L. maculata* is broader, its length about  $2\frac{1}{2}$  times its greatest width, and it is ornamented with a dark patch of pigment; the margin of the scale in *L. maculata* is never outlined by dark pigment.

In many respects, *L. panamica* resembles *L. tredecimdentata* Holthuis, a species that has been recorded from several localities in the western Indian Ocean (Manning, 1968). Both species have a slender antennal scale, a sharp anterior projection on the antennal protopod, and 10 or more teeth on the dactylus of the raptorial claw (11 in *panamica*, 10-13 in *tredecimdentata*). Furthermore, some specimens of *L. tredecimdentata* and *L. panamica* as well may have a small spinule or tubercle on the ventral surface of the uropodal protopod at the articulation of the endopod.

The Indian Ocean species differs from *L. panamica* in having the ventral keel of the eighth thoracic somite produced into a sharp posterior spine.

There is no indication in the present material of secondary sexual modifications in the shape, spination, and setation of the raptorial claw as recorded for *L. glabriuscula* and *L. scabricauda* by Manning (1969) or for *L. maculata* by Kemp (1913).

*Etymology*: The specific name is derived from the type-locality, the Gulf of Panama.

*Distribution*: Eastern Pacific region, from La Libertad, Ecuador, and the Gulf of Panama at a depth of 50 feet.

#### KEY TO AMERICAN SPECIES OF *Lysiosquilla*

1. Antennal protopod with triangular projection on anterior margin. Antennal scale slender, length 3 or more times greatest width ..... 2
  - Antennal protopod smooth anteriorly, lacking triangular projection on anterior margin. Antennal scale broad, length about 2½ times greatest width ..... 4
- 2(1). Dorsal surface of sixth abdominal somite and telson at most pitted and eroded, lacking erect spinules and denticles (Tip of uropodal endopod dark. Dactylus of claw with 11 teeth) ..... *L. panamica* new species
  - Dorsal surface of sixth abdominal somite and telson ornamented with numerous erect spinules and denticles ..... 3
- 3(2). Ventral keel of eighth thoracic somite produced into posteriorly directed spine. Uropodal protopod with spine on ventral surface at articulation of endopod (Tip of uropodal endopod dark. Dactylus of claw with 12 teeth) ..... *L. desaussurei* (Stimpson)
  - Ventral keel of eighth thoracic somite not produced into posterior spine, forming at most an erect angular lobe. Uropodal protopod usually unarmed at articulation of endopod (occasionally with minute tubercle) (Tip of uropodal endopod dark. Dactylus of claw with 8–11 teeth) ..... *L. scabricauda* (Lamarck)
- 4(1). Sixth abdominal somite smooth dorsally and laterally. Uropodal protopod unarmed ventrally at articulation of endopod. Tip of uropodal endopod light (Dactylus of claw with 6–7 teeth) ..... *L. glabriuscula* (Lamarck)
  - Sixth abdominal somite wrinkled, rough laterally. Uropodal protopod with spine ventrally at articulation of endopod. Tip of uropodal endopod dark (Dactylus of claw with 7 teeth) ..... *L. campechiensis* Manning

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